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EXAMINER	
SHAH, PARAS D	

ART UNIT	PAPER NUMBER
2609	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/647,611	BUSAYAPONGCHAI, SENIS	
	Examiner	Art Unit	
	Paras Shah	2609	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04/18/2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. . This Office Action is in response to the Amendment filed on 04/17/2007. Claims 1-18 remain pending. The Applicants' amendment and remarks have been carefully considered, but they are not persuasive and do not place the claims in condition for allowance. Accordingly, this action has been made FINAL.

2. All previous objections and rejections directed to the Applicant's disclosure and claims not discussed in this Office Action have been withdrawn by the Examiner.

Response to Arguments

3. Applicant's arguments (pages 11-15) filed on 04/17/2007 with regard to claims 23 have been fully considered but they are not persuasive.

Applicant has argued that the Brotman *et al.* reference with respect to the newly amended claims are novel since a plurality of characters are inputted and then processed. The amended claims necessitate a new ground for rejection due to the change in scope of the claims. Hence, as will be shown below, the Meador *et al.* reference has been applied to meet this limitation. The amended claims necessitate a new ground for rejection due to the change in scope of the claims.

With respect to claims 2-14, Applicant has argued that the Hartley *et al.* reference would not be combinable since the application is directed towards computer software application. The Examiner traverses this argument by citing the relevance of the reference in col. 5, lines 26-40. The cited section shows the input of sound through a telephone, which is similar to an input of sounds in the Brotman *et al.* reference. The

computer system mentioned by the Applicant is used for processing the input sound, which is also done by Brotman *et al.* Hence, both Hartley *et al.* and Brotman *et al.* references address similar applications. The Hartley *et al.* reference solves a problem (e.g. grammar for similar characters) that may be apparent in the Brotman *et al.* reference. Further, the Applicant's argue that the Hartley *et al.* reference is a collection of words and phrases. The examiner traverses this argument by citing col. 3, lines 50-53, which shows the inclusion of characters as well as words.

4. Applicant's arguments with respect to claims 1-23 have been considered but are moot in view of the new ground(s) of rejection.

Response to Amendment

5. Applicants' amendments filed on 04/17/2007 have been fully considered. The newly amended limitations in claims 1,15, 18, 20, and 23 as well as the newly amended necessitate new grounds of rejection. The prior art reference by Meador *et al.* (US 5,638,425) has been applied to teach the plurality of alphabetic characters input by the user.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claim 1,15-17 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brotman *et al.* in view of Meador *et al.* (US 5,638,425).

As to claims 1 and 23, Brotman *et al.* discloses a method for receiving a first spoken alphabetic character input from a user (see Figure 2, element 110); passing the first spoken alphabetic character input received from the user through a speech recognition engine (see Figure 1, element 940 and col. 3, line 33-35) (e.g. It should be noted that it is inherent that the speech recognition as mentioned by the reference will recognize the utterance in order to understand the input, which will enable the same behavior as that by the applicant); at the speech recognition engine, recognizing the first spoken alphabetic character input (Col. 3, line 47-48) received from the user; querying the user for verification that the recognized alphabetic character input is the same (Col. 3, line 47-49) as the first spoken alphabetic character input (e.g. It should be noted that it is inherent that user verification is needed for the process of the next character input to continue as mentioned by the reference); if the recognized alphabetic character input is not the same as the first spoken alphabetic character input received from the user (see col. 3, line 51-52), receiving from the user a dual tome multi-frequency (DTMF) key

tone for each of one or more first spoken alphabetic characters received from the user (see col. 3, line 52-55); if one alphabetic character string associated with the DTMF key tones received from the user matches the first spoken alphabetic character input received from the user matches the first spoken alphabetic character input received from the user, designating the one alphabetic character string associated with the DTMF key tones (see col. 3, line 54) received from the user that matches the first spoken alphabetic character input received from the user as a correct alphabetic character input (see col. 3, lines 55-57). However, Brotman *et al.* does not specifically disclose the input of comprising plural alphabetic characters. Meador *et al.* discloses **inputting a plurality of input characters** from a user and performing verification for the correct input characters (see col. 3, lines 40-45 and col. col. 4, lines 21-41) (e.g. In this cited section, the user is inputting a location name. The name is compared to the set of phoneme strings (e.g. which can be characters) and if the probability is not over a threshold the spell out the location. Further, the cited Meador *et al.* reference is relevant to the Brotman *et al.* reference since it is directed towards directory assistance.) It would have been obvious to one of ordinary skilled in the art at the time the invention was made to have combined the teachings presented by Brotman *et al.* with the inclusion of words as input consisting of characters. The motivation to have combined the two references involve the savings in time with regard to locating the user's request without error (see Meador *et al.*, col. 4, lines 50-65) as would benefit the teachings of Brotman *et al.*, where the input is character by character.

As to claim 15, Brotman *et al.* discloses a method prior to receiving from the user a DTMF key tone for each of the one or more spoken characters input by the user: prompting the user for a DTMF key tone (see col. 4, line 57) for each of the one or more spoken alphabetic characters input by the user (see col. 4, line 58); and querying the user to verify that the DTMF key tone received from the user are correct (see col. 5, line 40 and lines 41-43).

As to claim 16, Brotman *et al.* discloses a method prior to receiving from the user a DTMF key tone for each of the one or more spoken characters input by the user as a correct alphabetic character input requested from the user: determining whether an alphabetic character string associated with the DTMF tones (see col. 5, lines 5-7) received from the user sounds like the first spoken alphabetic character input (see Col. 5, lines 20-23); and querying the user to determine whether the alphabetic character string associated with the DTMF key tones (see col. 5, line 40 and lines 41-43) received from the user match the first spoken alphabetic character input received from the user.

As to claim 17, Brotman *et al.* discloses a method comprising: if more than one alphabetic character string is determined to be associated with the DTMF key tones (see col. 5, lines 5-7) received from the user that sound like the first spoken alphabetic character input received from the user (see col. 4, lines 14-15), receiving a second spoken input of the alphabetic character input from the user (see col. 5, line 57); comparing the second spoken alphabetic character input received from the user to each of the more than one alphabetic character strings determined to be associated with the DTMF key tones (see col. 5, lines 59-61) (e.g. The reference requests the user to

repeat the utterance spoken to determine the actual word uttered. The process repeats where a DTMF signal is used to correctly identify the spoken word) received from the user that sounds like the first spoken alphabetic character input (see col. 5, line 57) (e.g. re-utter is the same spoken alphabetic character used for comparison) received from the user; and if the second spoken alphabetic character input received from the user matches one of the more than one alphabetic character strings determined to be associated with the DTMF key tones received from the user (see col. 5, line 59), designating the alphabetic character string associated with the DTMF key tones that matches the second spoken alphabetic input received from the user as a correct alphabetic character (see col. 5, line 60-62 and line 45 and Figure 3 elements 220, 260, 270, and 120).

9. Claims 2-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brotman *et al.* in view of Meador *et al.* (US 5,638,425) as applied to claim 1 above, and further in view of Hartley *et al.* (US 6,910,012).

As to claim 2, Brotman *et al.* does not specifically disclose the use a grammar definition defining a set of alphabetic characters acceptable to speech recognition engine. Hartley *et al.* discloses the use of grammars (see col. 6, line 18) to define a set of alphabetic characters (see col. 6, line 26) to the speech recognition engine. It would have been obvious to one of ordinary skilled in the art to have modified the speech recognition engine shown by Brotman *et al.* by a grammar as shown by Hartley *et al.*. The motivation to combine the two references would be to increase the matching of the

spoken utterance (see Hartley *et al.*, col. 2, line 32-33) and limit the number of characters by the speech recognition system.

As to claims 3 and 4, Brotman *et al.* discloses a system that uses alphabetic (see abstract) letters for input by user (see Figure 2, element 110) in a speech recognition engine. (e.g. It should be noted that the reference does not specifically state the letters of the alphabet, the reference incorporates the English alphabet as input to the speech recognizer. It would be obvious to include the letters a-z in the alphabet).

As to claims 5-7, Hartley *et al.* discloses the inclusion of phonetic versions of alphabetic characters in the grammar (see col. 2, lines 21-24). It should be noted that these letters are included along with the original alphabet (see col. 6, lines 18-21).

As to claims 8-10, Brotman *et al.* discloses a method whereby the alphabetic character input received involves the use of DTMF key tones (see col. 5, line 5), which include numbers (see col. 5, line 6). It is inherent for a telephone keypad to include numbers 1-9.

As to claim 11, Hartley discloses a method for including a set of all alphabetic characters in a grammar (see col. 6, line 18). However, Hartley *et al.* does not specifically disclose the use of DTMF key tones. Brotman discloses the use of DTMF key tones. This could be included in the grammar file to be recognized by the speech recognition unit. The motivation to include the DTMF signals in the grammar is for disambiguation (see col. 3, line 53-54).

As to claim 12, Hartley *et al.* discloses a method converting the alphabetic character input from audio to digital format (see col. 6, line 60-61).

As to claim 12, Hartley *et al.* discloses a method converting the alphabetic character input from digital to audio format (see col. 5, line 44-50) (e.g. it should be noted that the digitized signal from the speech recognition engine is transformed into an analog signal for future voice recognition stages (voice applications).

As to claim 13, Brotman *et al.* discloses the verification of the character input is the same as that of the spoken character (see Figure 2, elements 140 and 150).

As to claim 14, Brotman *et al.* discloses the use of a telephone for the presentation of the recognized character (see col. 2, line 33 and col. 3, line 6-8) (e.g. It is inherent that a telephone includes such signals as voice and DTMF key signal. Further, the reference uses the telephone as the communication mode).

10. Claims 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brotman *et al.* in view of Meador *et al.* (US 5,638,425), and further in view of Hartley *et al.*

As to claim 18, Brotman *et al.* discloses a system for alphabetic speech recognition comprising: receiving a DTMF key tone from a user (see col. 5, line 5-7); determining one or more alphabetic character combinations that are represented by the DTMF key tone input (see col. 5, lines 5-28) (e.g. It is shown in the reference the method of determining the character set corresponding to the DTMF key pressed. Also, the order of the steps presented by the applicant where the first spoken input is received first or the DTMF key tone is received first will not make a difference to the recognition of the uttered word); receiving a spoken alphabetic character input from the user (see col. 5, line 10-14); passing the spoken character from the user to a speech

recognition engine (see Figure 1, element 940 and col. 3, line 33-35); matching the spoken input to that of the DTMF key tones and then designating the alphabetic character as the correct alphabetic character (see col. 5, lines 24-33) (e.g. It is shown in the reference that the DTMF signal is matched to that of the stored signal representing spoken character. Once one has been eliminated the next stored signal is compared). However, Brotman *et al.* does not specifically disclose the use of an audio to digital conversion and the input of DTMF key tones comprising plural alphabetic characters. Meador *et al.* discloses the **input comprising multiple alphabetic characters via DTMF key tones** (see col. 9, lines 41-48). Hartley *et al.* does disclose an audio to digital converter (see col. 6, line 60-61). It would have been obvious to one of ordinary skilled in the art to have included the audio to digital converter when presenting the signal to a speech recognition device and the input comprising multiple input characters via DTMF selection. The motivation to modify the speech recognition system by Brotman *et al.* by the digitizer shown by Hartley *et al.* is for analysis by a speech recognition system (see Hartley *et al.*, col. 1, line 26). Further, the motivation to have modified the Brotman *et al.* reference with the input of multiple DTMF key tones for the plurality of characters involves the locating of the request specified by the user when the spoken characters are not satisfactorily recognized (see Meador *et al.*, col. 4, lines 34-41), which would benefit the teachings of Brotman *et al.* in savings of time by acquiring the representative characters ahead of time.

As to claim 19, Brotman *et al.* discloses the use of phonetic versions of characters (col. 5, lines 11-13) (e.g. It should be noted that the reference uses the

phonetic versions when choosing the correct character from the DTMF signal. Further, the use of phonetic versions of DTMF signals could be used if they are loaded in a grammar file as said by the applicant. Hartley *et al.* discloses a grammar file that is used for having a preset character set for the speech recognition engine. A similar grammar file can be used for the phonetic variants of the DTMF signal).

11. Claims 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brotman *et al.* in view of Meador *et al.* (US 5,638,425), and further in view of Hartley *et al.*

As to claim 20, Brotman *et al.* discloses a system for alphabetic speech recognition comprising: a speech recognition engine (see Figure 1, element 940 and col. 3, line 33-35) (e.g. It should be noted that it is inherent that the speech recognition as mentioned by the reference will recognize the utterance in order to understand the input, which will enable the same behavior as that by the applicant); receive a first spoken alphabetic character from a user (see Figure 2, element 110); query the user for verification that the recognized alphabetic character input is same as the spoken alphabetic character (see col. 3, line 47-49); receive from the user a DTMF key tone for each spoken alphabetic character input from user if recognized character is not the same (see col. 4, lines 52-55 and Col. 5, lines 5-28); designating an alphabetic character associated with the DTMF key tone that matches the alphabetic character input from user (see col. 5, lines 24-33) (e.g. It is shown in the reference that the DTMF signal is matched to that of the stored signal representing spoken character. Once one has been eliminated the next stored signal is compared). However, Brotman *et al.* does

not specifically disclose the conversion of the character input from audio to digital format and the input of plural spoken alphabetic characters. Meador *et al.* discloses **inputting a plurality of input characters** from a user and performing verification for the correct input characters (see col. 3, lines 40-45 and col. col. 4, lines 21-41). Hartley *et al.* does disclose a method of digitizing the spoken utterance for input into the speech recognition engine (see col. 6, line 60-61). It would have been obvious to one of ordinary skilled in the art to have included the audio to digital converter when presenting the signal to a speech recognition device and the input composed of plural alphabetic letters. The motivation to modify the speech recognition system by Brotman *et al.* by the digitizer shown by Hartley *et al.* is for analysis by speech recognition system (see Hartley *et al.,* col. 1, line 26). Further. The motivation to have combined the two references involve the savings in time with regard to locating the user's request without error (see Meador *et al.* col. 4, lines 50-65) as would benefit the teachings of Brotman *et al.*, where the input is character by character.

As to claims 21 and 22, Brotman *et al.* discloses the determination of an alphabetic character string associated with the DTMF key tones sounds like the first spoken alphabetic character (see col. 5, lines 24-33) (e.g. It is shown in the reference that the DTMF signal is matched to that of the stored signal representing spoken character); querying the user to determine if the alphabetic character associated with the DTMF key tone matches the first spoken alphabetic character received from the user (see Figure 2, elements 230 and 240 and Col. 5, lines 34-39). A second spoken character is done in the reference to select the correct letter (see Col. 5, lines 57-62).

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paras Shah whose telephone number is (571)270-1650. The examiner can normally be reached on MON.-FRI. 7:30a.m.-5:00p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Xiao Wu can be reached on (571)272-7761. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

P.S.

5/10/2007

XIAO WU
SUPERVISORY PATENT EXAMINER